

RF POWER TRANSISTOR AVALANCHE BREAKDOWN DETECTION CIRCUIT  
AND METHOD THEREFOR

ABSTRACT OF THE INVENTION

An apparatus for detecting the onset of avalanche breakdown in a radio frequency bipolar power transistor is provided. The radio frequency bipolar power transistor includes a first transistor cell and a second transistor cells. The first and second transistor cells are functioning cells of the radio frequency bipolar transistor. The first transistor has a base ballast resistor. The second transistor cell has an emitter ballast resistor. The operation of the first and second transistor cells are monitored and compared against one another. A first difference voltage is generated from the first and second transistor cells under normal operating conditions. A second difference voltage is generated from the first and second transistor cells at the onset of avalanche breakdown.